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Agricultural Engineering. Vol. 12, No. 8. August, 1931.

Function of the Extension Engineer in the Reorganization of Agriculture. By B. B. Robb. p. 293-7.
We are in midst of great depression but there have been similar periods before. As in past, American Farmer had adjusted himself to problems of past, so in future he will adjust himself to problems that will arise in future. To assist farmer in making adjustments that are continually required of him with minimum loss of time and money and with least hardship to himself and his family is then function of extension agricultural engineer.

After the Century of the Reaper, the Century of Power. By Cyrus McCormick, Jr. p. 298-300.
Agriculture's advance into realm of solvable problems had to await invention of reaper and that upsurge of mechanical and cultural improvement which reaper began. On other hand, it is equally possible that agricultural improvement has been partially due to coincidental recognition of fact that farm problem is human as well as economic.

Electricity and the Agriculture of the Next Ten Years. By E. A. White. p. 301-5.
There probably will be still smaller percentage of our population living on farms than is case today. Industry will be further mechanized. New crops will become of commercial importance. Competition between great producing regions of our own country will be just as intense as ever if not increased. Sphere of larger animals will be further encroached upon by smaller animals and chemists. We should find more stable farm population with attention focused upon developing farm home and building rural community. There will be pride in agricultural achievement.

Men who succeed in this their chosen field of endeavor will receive acclaim and accord such success warrants. We will hear more about agricultural organizations. And, on top of it all, farmers of United States will still be aggressively reaching for all they can obtain of world's markets. We as agricultural engineers certainly can do nothing less than hope and work for virile, proud, able, independent farmer, whether working for himself or under some form of management, able to hold his own with other interests or groups in this country, yes, and whole world.

Land Reclamation Work of the Bureau of Agricultural Engineering. By S. H. McCrory. p. 305-6.
Federal department of agriculture is far more concerned in enabling our 6,250,000 farmers to carry on successfully on land they have, than in adding to present cultivable acreage by bringing in new land. We intend to shape our entire research program around the thought and there is ample field here also for activities of Land Reclamation Division of Society.

Philosophy of Agricultural Engineering. By J. Brownlee Davidson. p. 307-9.
It would appear that agricultural engineer may have just reason to feel proud of his contribution to progress of American agriculture and that he may properly take credit for helping in making some of benefits of civilization available to masses. To be blamed generally for distress of depression and unemployment is only undeniable evidence of effectiveness of his service. As we approach problem of providing necessary regulation to keep our economic machine running smoothly, and making of necessary adjustments of employment, agricultural engineer should as service to his country take his share of responsibility.

Economics of Storing Grain on the Farm. By E.J. Bell,Jr. p.311-12.
There are several conditions under which grain can be handled satisfactorily on farm: (1) Farm storage is necessary when local elevators are congested or when hauling facilities are not sufficient to move crop as rapidly as it is threshed or combined;(2) farm storage is often necessary in order to keep separate high quality country run grain; (3) under some conditions grain can be dried or cleaned to advantage on farm; (4) per bushel cost of constructing farm granaries is often less than that of constructing country elevators; (5) facilities must be provided on farm for cleaning and treating seed grain; and (6) when grain is to be fed to livestock, farm storage facilities are necessary. Factors which

tend to discourage use of farm storage are:(1) It adds to total cost of marketing; (2) it is costly or impossible to move grain from farms if roads are bad; (3) grain stored on farm is less desirable as collateral for loans than if stored in public elevator; and (4) efficient machinery for conditioning and cleaning large volumes of grain cannot be provided on farm as readily as in country elevators.

Storing Rough Rice in Bulk in Concrete Terminals and Country Elevators. By G. P. Bodnar and E. N. Bates. p. 313-14.

Storage Facilities for Safe Keeping of Rice. By J. D. Long. p. 314.

Some Problems in the Storage of the Southern Rice Crop. By W. D. Smith. p. 315-16.

New Developments in Dairy Refrigeration. By L.C. Prickett. p. 317-20.

Dynamic Properties of Soil. II. Soil and Metal Friction. By M.L. Nichols. p. 321-24.
Friction between soil and metal surface may be classified by division into four distinct and separate phases. These phases depend upon bearing power of soil, its moisture content and pressure of metal surface. Colloidal content is controlling soil factor. Approximate formulas for determining frictional values and moisture contents at which different phases occur in non-plastic soils were derived from friction data. In plastic soils absorptive and chemical action of colloidal content becomes more important and Atterberg consistency constants are used as indices of frictional values. Polish is shown to affect frictional values materially in heavier soils, but as no measure of polish was available no mathematical formula for its effect was attempted. Polish higher than that commonly found on commercial plows was found to be of no practical value on sandy soil. It was found that adhesion of soil to plow surfaces varied with polish and composition of metal. Steels containing chromium or nickel were most satisfactory of those tried. Experiments with various surface and heat-treatments indicated that surface attraction for soil moisture may be altered but no practical method of doing this was found.

Brick & Clay Record. Vol. 79. No. 3. August, 11, 1931.

Reinforced Brick Masonry. Effects of Transverse Loads. By E.F. Gallagher. p. 110-14.
Report of recent research done by Martin J. Feeney and Raymond W. Miller at the Massachusetts Institute of Technology. Reinforcing steel should consist of small size bars in order that unit bond stress may be minimized and at same time provide mortar joint of nominal width. Attention should be paid to type of bond employed. Where unit shearing stresses are high, bent bar or stirrup reinforcement, or both, should be provided. Mortar used should be one of high compressive strength and of good bond value. Reinforcing steel should preferably be of deformed bars with ends well hooked to provide good anchorage.

C.B.M.A. Gives Suggestions for Reinforced Brickwork. p. 114.
Two important points which should be watched in reinforced brickwork construction are: 1, to see that all mortar joints are filled and 2, see that steel reinforcing rods are properly placed and are well embedded around entire outer area in mortar.

_____ Vol. 79. No. 4. August 25, 1931.

High Cost of Wanting Penalizes Home Building. By Clarence K. Bros. p. 160-2.
Table gives cost schedule and specification.

Tradition of 5,000 years helps interpret the newest in home building. By Henry Dubin. p. 163, 166-7.
Home of future, it is said, will be built in design based on right angles and circles, comfort will be paramount and appearance will be neat. Majority have been built of walls of steel, glass or concrete.

British Sugar Beet Review. Vol. IV. No. 12. August, 1931.

Co-operation of Farmer and Factory-I. By Earl Mayo, Jr. p.273-7.

California Cultivator and Livestock and Dairy Journal. Vol. LXXVI, No. 25. June 20, 1931.

Geological Research May Solve Water Problem. By Harold L. Green. p. 645.
Salient points set down above are here summarized. Additional water resources, in some areas known to be vast, located in crust of planet are called to attention of those facing water shortage. Science of geology can affect their location and description. Due to efficiency of well drilling today these resources are available for exploitation. Though initial drilling cost is heavy, maintenance is light, due to hydrostatic pressure in reservoir. Once supply is tapped it is inexhaustible, though, of course, initial pressure and volume in some cases, not in all, will be reduced.

Commerce. Business Voice of the Middle West. Vol. 28. No.2. Sept. 1931.

Erosion Gnaws at the World's Bread Basket. By C.G. Bates. p. 75-6.
Soil erosion is doing, and can do more in next half century to reduce agricultural productivity of great Mississippi basin than any one thing that is likely to occur, not excepting insects, crop diseases, or animal diseases. $100,000,000 a year soil depletion in Middle West and its effect on farming; what simple gully control and tree planting can do to check costly despoliation and restore beauty to great rivers.

Commercial Standards Monthly. Vol. 8. No. 1. July, 1931.

Extension of Weights and Measures Supervision: Concerted efforts of business and industry needed to spread protection afforded through weights and measures supervision. By Ralph W. Smith. p. 11-13.
Weights and measures official has two well defined classes of duties. First and more fundamental of these duties is testing for accuracy of actual instrumentalities of weighing and measuring. Second duty is supervision over use of approved apparatus to insure that it is of proper design for use to which it is being put and that it is being properly used, prevention of short weight and short measure, and inauguration of proper legal steps to secure punishment of those guilty of willfully delivering less or taking more than quantity represented.

_____ Vol. 8. No. 2. August, 1931.

Federal Standards for Farm Products: Federal standards and certification have greatly facilitated future trading in agricultural commodities. By Nils A. Olsen. p. 35-8.

Simple Time Meter: National Bureau of Standards constructs apparatus for integrating detached time intervals. By H.B.Brooks. p. 49-50.

Country Gentleman. Vol. CI. No. 8. August, 1931.

To Hold Our Lead in Cotton. By Arthur M. Hyde. p. 8, 52.
Final measure of agricultural stability must be higher standard of living. To obtain this, reasonable profit from farm production is essential. Farmer must have margin of profit over and above costs of producing commodities. United attack on cotton problems. Cutting corners on growing costs. Hope for cheaper potash. Competing at profit.

What is a Big Farm? By R.U. Blasingame. p. 12-13, 36.
Tools for modern potato patch. Large scale farming on thirty acres. Big yields. Striking totals.

Dakota Farmer. Vol. 51. No. 12. June 15, 1931.

Water Requirement, Weeds, Crops: Use of water by weeds given intensive study under Dakota conditions. By A.C. Dillman. p. 459, 470.

Tractor Elevated Harrow Hitch: Old well casing and two wheels utilized. By Cap E. Miller. p. 466.

Vol. 51. No. 14. July 15, 1931.

Husker-Elevator a New Corn Harvester: Devised by Engineering Department of South Dakota State College. By Ralph L. Patty. p. 526.
To be used with 2-row snapper in harvesting corn. Husking is done at crib as corn is being elevated. Machine is designed so that it will fit into any portable farm elevator by using single additional short section of conveyor.

Domestic Engineering. Vol. 136. No. 1. July 11, 1931.

Originality in Piping Scheme for Forced Circulation, Gravity Circulation with Reversed Returns. By F.E. Giesecke. p. 41-3, 61-2, 65, 67-8, 70, 91-2.
By balancing friction losses through various circuits of hot water heating system, proper amount of hot water will be supplied to each radiator and success of installation assured. Frequently, orifices are used to assist in this procedure; selection of proper pipe sizes is, of course, of paramount importance.

Test Oil Burner Efficiency: Practical methods which every contractor can use in checking his oil burner installations. By A. H. Senner. p. 83-7.
Efficiency of the burner has been defined as percentage of heat energy of fuel which is evolved and transmitted to heating medium. In particular test layout heat transmitted to water, neglecting that which is lost from boiler surface by radiation, is represented by temperature rise of certain quantity of water as indicated by water meter readings. Heat which is put into operation is represented by total calorific value of oil burned. Expressed mathematically, heat absorbed by boiler is product of weight of water passed multiplied by temperature rise and this in turn multiplied by specific heat of water.

Vol. 136. No. 3. August 8, 1931.

Test Oil Burner Efficiency. By A. H. Senner. Part 2. p.77-80.

Domestic Engineering. Vol. 136. No. 3. August 8, 1931. (Continued)

Insulation Reduces Cost of Automatic Heat. By H.S. Ashenhurst. p. 88-9.
Extent of building's heat losses determine type of fuel to be recommended and heating plant to be installed. Therefore, it is imperative to cut down these heat losses rather than increase size of heating equipment.

Electrical World. Vol. 98. No. 8. August 22, 1931.

Electrically Heated Greenhouse. By G. N. Hawley. p. 322-3.
Heat was applied by stringing weatherproof iron wire on split knobs under benches. Two circuits of No. 12 B.W.G. weatherproof iron wire, each 870 ft. in length, were used. These circuits consist of series loops of twelve wires each placed on 9-in. centers. One circuit was placed under center bench and other was divided equally between two outside benches.

Household Ventilation Electrically Feasible. By Frank C. Taylor. p. 328.
Ventilation of homes holds some interesting loadbuilding possibilities for utilities as well as comfort and economy for occupant. From financial point of view 1/6 h.p. motor running continuously consumes approximately 110 kw.-hr. per month, twelve months in year, or 1,320 kw.-hr. annually, approximately same consumption as electric range, but in case of fan motor connected load is approximately 150 watts running continuously, compared with 7-kw. electric range with demand of 5 kw. for approximately same kilowatt-hours per month.

_____ Vol. 98. No. 9. August 29, 1931.

Why Domestic Customers Use 4,000 Kw.-Hr. per Year in Winnipeg. p. 364-6.
Customer receptivity, low rates, small fuel competition and co-operation of contractor-dealers largely account for highest residence consumption on continent.

Electricity on the Farm. Vol. 4. No. 7. July, 1931.

Some Ideas Which Have Increased Profits for a Truck Farmer. By S. R. Gibbons. p. 8-10.

Simple Sewage System. By E. R. Meacham. p. 15-17, 37.

_____ Vol. 4. No. 8. August, 1931.

Ensilage Cutting. By E. R. Meacham. p. 9-13.

Electricity on the Farm: Vol. 4. No. 8. August, 1931. (Cont'd)

Giving Sweet Potatoes a Start by Heating the Beds. By Sam B. Manes. p. 25-6.
In fire heated bed planted at same time plants were 12 days later in sprouting, while in unheated bed they were 22 days later in showing growth. Bed is 45 feet long and three feet wide. It will produce approximately 60,000 plants. Frame is hollow insulated with sawdust. Heating wires are imbedded in two inch layer of washed sand in bottom of bed. Over this is placed two inches of soil, layer of potatoes, and then covering of two inches of soil. Two-inch covering of sawdust fills dual purpose of holding moisture and acting as top insulation. Resistance wires are lead covered, and are hooked onto 110-volt circuit.

Taking Milk Out of the Home. By J.P. Schaenzer. p. S9-S11, S13-14.
Substantially built milk house of good design is essential in production of clean and good quality of milk and cream.

Engineering Contracting. Vol. LXX. No. 8. August, 1931.

Engineering Textbook. By George L. Hosmer. p. 195-8.
Discusses style, arrangement and preparation, literary requirement, credit for material, corrections and revisions, proofs, index and copyright.

Items of Interest on the Boulder Canyon Project. p. 199-209.
Boulder City water-supply system. Colorado River Commissions and Boards. U. S. Department of the Interior., Bureau of Reclamation. Kingman-Hoover Dam Highway. Engineers approve Hoover Dam plans.

Engineering News-Record. Vol. 107. No. 4. July 23, 1931.

Pipe-Line Corrosion and Soil Conductivity. p. 135.
Bureau of Standards concludes that there is definite correlation between pipe corrosion and soil resistivity and that where soil conductivity is high, corrosion occurs.

Deadwood Dam Construction Work Controlled by 60-Mile Truck Haul. By R. J. Newell. p. 144.
Additional element of Boise irrigation project in Idaho. General details and dimensions of 153-ft. structure are given in drawing.

Deficiency of Rainfall in Southeastern States. By Special Correspondence. p. 153.
Present deficiencies are most marked over much of Georgia, northern Alabama and eastern Tennessee. Carolinas have fared better, with Virginia in fairly good shape. But in

none of this territory, except probably in latter state, have groundwater reserves, depleted by several years of subnormal percolation, been fully restored. 1930 and 1931 may furnish need for revision of many previous minimum records for streamflows for two consecutive years.

Vol. 107. No. 5. July 30, 1931.

Too Many Graduates: Editorial. p. 161.
There may be several men for every engineering job that is available when colleges turn out their graduates each year, but there will not be too many for good of profession. Crowding from bottom will stimulate those already in profession to greater effort, and wide and ever wider dissemination of knowledge of fundamental principles upon which all engineering is based will broaden usefulness of profession and will increase opportunities for its members. There cannot be too many graduates turned out by our engineering schools.

Madden Reservoir to Increase Water Supply of Panama Canal: Reservoir formed by 200-ft. concrete dam on Chagres River will provide water for four times the present canal traffic--Construction work to start this fall. p. 162-4. Normal surface of Madden reservoir is to be held as close as possible to El. 240, or 140 ft. above low water in river. This gives reservoir capacity of 22,056,000,000 cu. ft. (506,000, acre-ft.) Permanent crest of dam is to be at El. 232 and drum gates 100 x 18 ft. on spillway crest will be used to hold reservoir level at El. 250. Estimates of runoff indicate that 1,000-year flood will raise reservoir to El. 263. At that level 12,000,000,000 cu. ft. of storage will be available for flood control.

Cast-in-Place Construction Applied in New Concrete House. p. 166-7.
Precast studs and simple formwork are the basis of a building method adapted to any design and requiring no special equipment. Holes cored in studs assist in bonding wall permit of placing reinforcing bars above and below windows or at half-story height. Floors are also of reinforced concrete. Cost not more than 3 cents per square foot for materials in excess of wood-frame construction.

Engineering News-Record. Vol. 107. No. 5. July 30, 1931. (Cont'd)

Composition of Earth Dams. Part III: New Data. Conklingville Dam Built by the Semi-Hydraulic Method. By Edward H.Sargent. p. 168-70. Variations from American Practice Found in German Dams. By J. Albert Holmes. p. 170-2.

Experience in Cleaning Irrigation Ditches by Machine. By George Ebner. p. 172.

Grouting Cracks Restores 30-Year Old Dam on Merced River. By Harold K. Fox. p. 178-80.

Floodflows Over Embankments: Letter from G.W. Payne. p. 187. Tests run at University of Iowa hydraulic laboratory are shown to be very useful in making estimates of valley discharge where overflows of embankments occur. This is no doubt true in many instances, but under conditions obtaining during 1927 overflow of Missouri Pacific track in White River valley south of Newport, Ark., and similar cases, writer is of opinion that results obtained will not be correct measure of valley overflow and that waterways based upon such estimates will be excessive. As crest was reached maximum discharge over and under track from storage was considerable. So I find 552,000 sec.-ft. discharge for 1927 flood at stage of 35.6 as estimated by Morgan Engineering Co., does not appear reasonable when compared with estimate of 310,000 sec.- ft. in 1916 at stage of 34.3 made by C. E. Ramser, senior drainage engineer, U. S. Department of Agriculture. Study of several high-water profiles along embankments across wide river valleys has led writer to conclusion that there is relation (a) between flood slope, total valley width and total length of openings required to pass major floods with given permissible "head" or drop in water surface across track; (b) between flood slope and length of continuous permissible embankment, which, when known, will give proper spacing of waterways.

Vol. 107. No. 6. August 6, 1931.

Frozen Concrete Used in Russian Buildings: Winter concrete allowed to freeze before setting--Thawing and setting then occur in the spring. By A. M. Gunzburg. p. 207. At moment before actual setting of concrete, cement grains are enveloped in thin molecular film of water and greater proportion of water in mix lower will be strength of concrete. If cold water is used, volume will be less than with heated water, but strength will be greater. If concrete freezes while setting, it will become rigid non-elastic mass consisting of sand, cement and ice particles, and such mass will fail after thawing. But by allowing

concrete to freeze before setting it will be in normal condition after thawing, so that setting can then begin and proceed to completion. As concreting must be done rapidly, forms must not be deep and reinforcing bars must be so arranged that concrete will flow freely and fill forms quickly without voids. It is absolutely necessary for concrete to freeze before setting begins. Cement is cold, aggregate must be cold and dry and water must have a temperature of 40 to 50 deg. F. Editorial on p. 199.

Rapid and Accurate Mapping in Semi-Arid Regions of Texas. By James E. Goddard. p. 210-12.
Standards of accuracy and methods of procedure used in surveying 153,736 acres for an irrigation development in the lower Rio Grande valley--Work done by contract--Independent check lines run. Map specifications, horizontal control, vertical control, topography and culture, surveying in brush, checking topography and culture, organization and progress, coordination of mapping, design and construction.

Big Tujunga Arch Dam 240 ft. High Added to Los Angeles Flood-Control System: Structure forms unit in plan to control flood peaks from 100 square mile watershed to permit complete absorption in spreading grounds--Variable-radius arch with gravity abutments. By E. C. Eaton. p. 217-18.
Structure is variable-radius type, concrete-arch dam, 240 ft. high with gravity abutments. Spillway structure is designed for runoff of 400 sec. ft. per square mile of catchment area and is built as part of one of gravity abutments. Features of project included intensive geological investigations, care in preparing excavation and concrete estimates (which permitted completion within 85 per cent of estimated quantities) and careful concrete control.

Old Irrigation Canal Replaced by Precast Concrete Pipe. By H. H. Kidder. p. 222-3.
New line is part of program of improvement of old highly developed irrigation system of 70,000 acres in Lower Rio Grande Valley of Texas. In addition to 72 in. line project includes 6 3/4 miles of 60 in. pipe and 3,250,000 sq. ft. of 2 in. reinforced-concrete canal lining.

Cellular Dams Patented in 1912: Letter from Dr. Ing. N. Kolen. p. 223-4.
Proposal is based on fact that with both empty and full reservoirs, in all horizontal sections, as well as at base, uniform distribution of normal stresses and ground pressures has been obtained--in other words, line of pressure runs as central line.

Drainage Project for Nile Delta. p. 227.

Reclamation is to be carried out by irrigation canal system that will flood salt lands with fresh Nile water, which will percolate through soil and ultimately find its way carrying with it salt in solution, to system of drains cut at slightly lower level than canals, which will discharge into Burullus, Mensala and Edku lakes, or directly into sea. Because of configuration of delta land, this washing and draining process, to certain extent, can be carried out naturally by gravity, but would be accelerated if level in drains were lowered by even few feet. High capacity low lift pumping stations are therefore to be installed near outlets of drains in order to lower water level. These pumping stations, of which there are to be fifteen, will be electrically driven, power coming from three generating stations at present under construction at Aft, Belqas and Seru.

Vol. 107. No. 7. August 13, 1931.

Sludge-Disposal Methods in Two Similar Sewage Plants. By E. G. McConnell. p. 247-9.
Filtration of sludge is practiced in one activated-sludge plant at Charlotte, N. C., and digestion and drying in other. Whether to dewater activated sewage-sludge by digestion followed by drying beds or by some type of mechanical filtration is question much discussed among engineers. Generally speaking, digestion and drying serve well for all plants if ground area is available. For large plants it may be advantageous financially to go into fertilizer business, in which case filtered product is desirable.

Old Wood Flume Utilized as Falsework for New Structure: Electric service company in Brazil builds a steel-truss-supported concrete flume over an 800 foot river crossing, utilizing existing piers. By R. G. Hackett. p. 251-2.

Public Works in Indo-China. By Harold E. Babbitt. p. 253-7.
Discusses organization of department railroads, irrigation, highways, and river control.

American Engineers in Russia: Comment upon their status, living conditions, technical problems and future prospects. By John M. Carmody. p. 262-4.

Vol. 107. No. 8. August 20, 1931.

Swiss Methods of Avoiding Silt Deposits in Reservoirs: Tunnel bypassing debris-laden floods maintains reservoir capacity--Granite invert erodes inch in six years. By Oren Reed. p. 289-90. Editorial p. 283.

Check Dams Control Debris Movements on Mountain Streams: Damage from debris carried onto valuable land largely eliminated by construction of inexpensive dams to form stilling pools. By L. M. Winsor. p. 290-1.

Stormwater Pumps Drain Levee District at Dallas, Texas. Use of borrowpits as storage basins for rainfall permits reduced capacities of five pumping plants--Motor-driven screw pumps and vertical-shaft centrifugal pumps. By Albert S. Fry. p. 292-4.

Testing Stormwater Pumps by Novel Method: In absence of flood a discharge head was created by throttling pump-discharge pipes. By H. W.English and Albert S.Fry. p. 294-5.
Pit was filled to level of water in suction bay through sluice gate on pit, this gate then being closed. Capacity of pump during test was measured volumetrically by observing drop in water surface in pit over an observed time. Head pumped against was artificially made by throttling discharge-gate valve.

Early Yuba River Flood. By W. W. Waggoner. p. 305.

Vol. 107. No. 9. August 27, 1931.

Panel System of Tile Drainage for Selfridge Flying Field: Important army airport on boggy ground bordering Lake St. Clair and Clinton River converted to all-year, all-surface flying field by 63 miles of subsurface drains. By Capt. Robert S. Beard. p. 322-5.

Engineering News-Record. Vol. 107. No. 9 August 27, 1931. (Cont'd)

High-Degree Sewage-Treatment Plant at Barrington, N. J. Pre-sedimentation, activation, post-sedimentation filtration, chlorination and sludge digestion-- Covered sludge beds. By W. D. Vosbury and P. B. Streander. p. 328-31.
Semi-rapid sand filtration and chlorination complete treatment given by activated-sludge plant. Before activation sewage passes through grit-and-screen chamber and presettling tank. Excess sludge goes through heated digestion tanks and to glass-covered drying beds. Incoming sewage is measured. Activation is effected by paddle wheels instead of by compressed air. Rapid sand filters are provided with rate-control and loss-of-head rate-of-flow gages.

Facts About Sugar.. Vol. 26. No. 8. August, 1931.

Cane Harvesting Apparatus. A. C. Howard, U.S. Patent No. 1,808,113; June 2, 1931. p. 365.
Stalks are cut by rotatable cutters, and drawn upwardly by conveyor, butt end first, and forced between series of spring brushes, by which stalks are trashed and cleaned; other conveyors and brushes bring tops into line against topping knife. Trash is blown out by air blast, while cut stalks drop into trough from which they are released from time to time. Chopping knives, reduce tops to fine bits.

Farm and Ranch. Vol. 50. No. 25. June 20, 1931.

Terracing the Blackland This Summer: Crop so that necessary terracing may be done little at a time. By M.R. Bentley. p. 2.

Adversity Is the Mother of New Uses for Cotton. By R. J. Cheatham. p. 2, 7.

Farm and Ranch. Vol. 50. No. 25. June 20, 1931. (Cont'd)

Sheet Erosion Greatest Soil Destroyer. p. 13.
Sheet erosion is much more widespread than gully washing, but it is more gradual and less noticeable. Excessive washing has virtually destroyed more than 17,000,000 acres of formerly tilled land in this country, but there is vastly larger area whose surface soil is slowly but constantly being washed thinner and thinner by every rain. Washing away of topsoil is rapidly lessening productivity of our land.

_____ Vol. 50. No. 26. June 27, 1931.

Saving the "Vegetable Cap": Southwest is developing consciousness of soil stewardship. By H. L. Gantz. p. 1, 3.
Terracing in Southwest is sounding death knell of erosion.

_____ Vol. 50. No. 30. July 25, 1931.

Hundreds See Terracing at Hollandale: Second regional terracing demonstration was a big show of methods and machines. By T. C. Richardson. p. 1-2, 13.

Farm Implement News. Vol. 52. No. 30. July 23, 1931.

Census Shows Crop Land Increased 6%--1925 to 1930--
Farm Equipment Values Analyzed. p. 14-15.

_____ Vol. 52. No. 31. July 30, 1931.

Telling the World About Good Farm Equipment. p. 14-15.
To eliminate even only one obsolete method is to make start in right direction; clearly worthwhile in season like present when profit hinges so closely on cost of production.

Combines in the Corn Belt: Conclusions drawn from study in Indiana and Illinois. p. 18.
Summary of report issued by Department of Agriculture covering investigation of harvesting small grain and legumes with combines and with binders.

Garden Tractors are Cost-Reducing Equipment. By Harold Ridenour. p. 19.

Farm Implement News. Vol. 52. No. 32. August 6, 1931.

Census of Tractors on Farms. p. 16.

_____ Vol. 52. No. 33. August 13, 1931.

Tractors on Farms in Thirteen States. p. 11.

Corn

Case Announces Two-Row/Harvester. p. 18-19.

New outstanding features incorporated in this machine is greatly improved system of picking and husking corn. This important operation is done by long combination picking and husking rolls of new design. These rolls are of closed or continuous contact type with long machined spirals and flutes. Stalks of corn are fed in at bottom end of rolls by lower gathering chain. Spirals in rolls and gathering chains continue to move material back to fluted portion of rolls. Here stalks are forced down. When ears of corn come in contact with rolls, fluted surfaces grip or pinch husks and separate them from ears. Largest portion of husks are removed at time ears are picked and remain attached to stalks as they pass down through rolls. Husking is completed at upper end of rolls where there are more flutes and where husking action is more vigorous. Husked ears and any trash that does not pass through husking rolls, drop into large steel auger conveyor. Besides conveying material to rear elevator, this auger cuts up or "digests" all trash by passing it under stationary steel knife. Rear elevator lifts corn and digested trash, then drops it through cyclone of air from large cleaning fan. This new one-man machine can be pulled with any dependable two-plow tractor equipped with power take-off.

Records Prove Lower Tractor Operating Costs on Corn Farms. p. 20-22.

Following article prepared by International Harvester Company is based on actual records of forty-seven typical producers of corn located in fourteen different states. It tells in figures why corn belt farmers buy tractors. Table shows tractor costs compared with horse costs.

_____ Vol. 52. No. 34. August 20, 1931.

Latest About Tractors on Farms. p. 11.

Corn Machine Prospect: Picker trade despite general conditions likely to exceed all previous records--Fair volume indicated for other lines. p. 14-15.

Farm Implement News. Vol. 52. No. 34. August 20, 1931. (Cont'd)

How Costs are Cut in Two Corn Operations: Proof of the economy of mechanical corn harvesting and the modern method of silo filling. By E. T. Leavitt. p. 16-17.

_____ Vol. 52. No. 35. August 27, 1931.

Use of Electricity on Farms. By S. H. McCrory. p. 15.
In last seven years its use has increased rapidly, so that today more than 644,500 of total of 6,288,648 farms in United States are making use of electric power. During 1930 farmers used 1,779,940,000 kilowatt hours of electricity, at a cost of $46,187,000.

Fuel Oil. Vol. X. No. 2. August, 1931.

Intermittent vs. Continuous Burners for Smaller Heating Jobs. Advantages of Continuous Type, By E. Y. Farquhar. p. 18, 100-103. Advantages of Intermittent Type. By W. F. Klockau. p. 19, 96-9.
Proper oil firing of small domestic systems depends to greatest extent upon balance between amount of combustion delivered by burner and ability of furnace or boiler to translate heat produced into radiation.

Adapting a Gas Boiler to Oil Firing. By George Kolen. p. 22-23, 93-5.

How to Correct a Deficient Warm Air Plant. By Arthur A. Poss. p. 26-7, 66-72.

139 Burners Approved by New York Board of Standards and Appeals. p. 30-32.

_____ Vol. X. No. 3. September, 1931.

Is Color or Shape of Flame Important. By Arthur H. Senner. p. 24-5, 90-4.

Mechanical Analysis of Oil Burner Equipment. p. 35-40, 64.

Hardware and Implement Journal. Vol. 36. No. 8. August, 1931.

Records Prove Lower Tractor Operating Costs. p. 25-8.

Tractors at 28 cents per Bushel or the Equivalent Thereof. p. 33-5.
At present prices of farm machinery, there is nothing farmer can buy that will give him such splendid profit on his investment. He can't compete with more progressive farmers without this equipment. But with modern, cost reducing machinery, American farmer can make more profit and enjoy higher standard of living in keeping with best American ideals.

Heating and Ventilating. Vol. 28. No. 8. August, 1931.

Application of Centrifugal Fans. By Chas. A. Carpenter. p. 45-50.

Chart for Quick Calculation of Moisture in Air. By Frederick S. Dellenbaugh, Jr. p. 51.

Hoard's Dairyman. Vol. 76. No. 12 June 25, 1931.

Caring for the Milking Machine. By J.C. Baker. p.455, 476.
Simplified system of caring for milking machine is as follows:

1. Machine must be washed immediately after milking.
2. Suck cold water and then hot water (165° F.) through teat cups and milk tube.
3. Hang teat cups and tubes on rack and fill with disinfectant, (0.5% lye solution.)
4. Wash head and bucket of milking machine in usual manner, using hot water and brush, and drain in place free from contamination.

Vol. 76. No. 13. July 10, 1931.

Insulated Tanks for Cooling Milk. By A.C. Dahlberg and J.C. Marquardt. p. 484, 501.
While surface cooler is extensively used, dry air refrigerators are not extensively used in this section of country. For this reason our experiments at Geneva have been confined wholly to use of tank partially filled with water rather than to dry air refrigerators. Several essentials need to be carefully considered in proper construction of tank. Tank ought to be large enough so that it will hold to overflow quantity of water which is approximately three times quantity of milk which will be placed into tank during the day. If overflow for water in tank is set at 21 inches, then it is necessary to allow approximately 17 by 20 inches of floor space in tank for each can. Figures apply to tanks of 6 to 10 can capacity. It is necessary to give slightly more room in smaller tanks.

Implement and Machinery Review. Vol. 57. No. 676. August 1, 1931.

"Garty-Apex" Wind Motors. p. 417.

Mark XI is for dynamo driving only. It has dynamo mounted at head, and geared directly to propeller by silent gears, which are protected by hood. Propeller itself consists of two stream line blades. Starting or stopping of wind dynamo is controlled by means of light wire placed at convenient position at base of tower. When this wire is released, it allows clutch to engage and wheel to put itself out of wind; light pull disengages clutch and puts wheel into wind. Electrical control from distance is effected by suitable magnet attached to control on tower and operated by switch from distance, and automatic control is by means of voltage relay placed across battery. Mark XII machine is similar to Mark XI, but head is fitted with nickel-chrome bevel gears running in oil bath. These gears transmit the power to revolving shaft down center of the tower, and from this shaft dynamo, pump or other machinery is geared.

"Schlayer-Heliaks" Thrasher. p. 418-19.

Machine is of hammer type as distinct from ordinary beater bar and peg drum patterns. Chiefly it consists of single long cylinder in which not only thrashing but, at same time, also shaking and sifting take place. In this cylinder, series of revolving hammers fixed on centrally placed shaft beat corn as it is fed in laterally and slowly. Through spiral arrangement of beating mechanism and corresponding shaping of cylinder wall, straw is caused to move along volute path in axial direction through machine, and in this way is exposed to continuous and successive blows of beating mechanism; it is consequently thrashed again and again, thoroughly shaken and, according to how machine is adjusted, more or less pulverized. At end of hammer shaft is straw blower, and nearby is chaff blower. Lower portion of cylinder forms big sieve, through which corn passes to horizontally placed spiral conveyor. Latter conveys corn to end of machine, where it is taken up by elevator, passes through cleaning blast and thence onwards to bagging.

German Potato Harvester. p. 419.

Implements and Machinery at the Royal Show. p. 420-7.

Implement & Tractor Trade Journal. Vol. XLVI. No. 16 August 1, 1931.

Engineering to the Farmers' Aid: New Bureau starts functioning with program which will help solve problems of machinery, buildings and fields. p. 9.

Implement & Tractor Trade Journal. Vol. XLVI. No. 16. August 1, 1931. (Cont'd)

Some immediate activities of new Bureau:
1. Developing more efficient equipment for corn borer control.
2. Mechanization of sugar beet production.
3. Studies in artificial hay drying.
4. Machinery to make cotton more profitable for southeastern states.
5. Cooperation in exhaustive study of cotton ginning.
6. Extension of terracing to prevent soil erosion.

Farm Machinery Prices Are Lower: Not only have been reduced in cost to farmer, but have been improved to operate more economically and efficiently. By L. R. Clausen. p. 10-12.

Deep Furrow Drills--Surer Crops. p. 23.
Dempster machine employs wide type of opener in which disks work in much same manner as lister bottom. Rows are run at right angles to prevailing winds. Every seed is covered to uniform depth at bottom of 6 inch furrow.

Massey Harris "G-P" Is Tested. p. 24.

Nebraska Tests John Deere "G-P". p. 25.

Allis-Chalmers "All Crop" Tested at Nebraska. p. 26.

Vol. XLVI. No. 17. August 15, 1931.

Promising Year for Feed Grinders: Wheat surplus and cheap feed with growing importance of live stock production bring early evidence of good demand. p. 11.

Cutting the Costs of Silo Filling. By E.T. Leavitt. p. 13.

Allis-Chalmers EK Undergoes Test. p. 24.

Vol. XLVI. No. 18. August 29, 1931.

Bangboard Harvest Days Are Over: Corn pickers, now at dawn of biggest selling season, will aid farmers in completing profitable year of low-cost production. p. 7. Modern corn picker is greatest cost reducing equipment yet available to corn grower. Even though costs of hand shucking may be lower than usual this year because of unemployment situation, corn picker will still save farmer from four to six cents bushel. Drawn by tractor and derives power for operating snapping and husking rolls, elevator and

Implement & Tractor Trade Journal. Vol. XLVI. No. 18. August 29, 1931. (Cont'd)

other working parts direct from power takeoff of tractor. This eliminates all former troubles experienced with machines deriving power from bull wheels and transfers matter of traction entirely to tractor which is competent to obtain adequate traction under all harvesting conditions. It also eliminates necessity for auxiliary engine together with this factor of expense.

Implement Record. Vol. 28. No. 8. August, 1931.

Records Prove Lower Tractor Operating Costs. p. 14-16.
Interesting statistical study based on 47 typical cost statements prepared by corn growers with medium-sized farms from 14 different States. Study of it shows that, by cutting man labor to nearly one-third, tractor reduces per-acre cost $4.73 or 51 per cent; second, that farmer on just 115-acre corn crop saves $543.69--enough to pay two-thirds of f.o.b. price of his tractor in one year; third, that if farmer could get his horse feed for nothing, it still would cost him 70 cents acre more to use horses than to use his tractor.

Official Nebraska Tractor Test--No. 189 Allis-Chalmers "All Crop". p. 26.

Industrial and Engineering Chemistry. Vol. 23. No. 8. August, 1931.

Paint Thinners. By F. L. Browne. p. 868-74.
Results of experiments on effect of paint thinners on durability of coatings of house paints are reported. Kind of thinner proved to be minor factor in durability. Nevertheless, coatings were definitely more durable when paint had been thinned with deliberately oxidized turpentine that left considerable residue on evaporation than when paint was thinned with ordinary turpentine or with petroleum or coal-tar distillates. Results point to possibility that turpentine may find its most valuable use in paint after it has been converted into non-volatile product whose incorporation in paint coatings makes them more durable.

Effect of Resin in Longleaf Pine on the Durability of House Paints. By F. L. Browne and C. E. Hrubesky. p. 874-7.
Each set of test panels was made from three boards from which samples were taken and analyzed for resin content, which was found to vary widely. Although marked differences in durability of coatings were often observed on three boards within sets of panels, differences bore no relation to content of resin, but on contrary were directly related to density and width of annual growth rings in boards.

Industrial and Engineering Chemistry. Vol. 23. No. 8. August, 1931. (Continued)

Heat Transfer in Stream-Line Flow. By T.B. Drew, J.J.Hogan, and W.H. McAdams. p. 936-45.

Mechanism of Heat Transmission. By T.B. Drew and W.P.Ryan. p. 945-53.
Preliminary study of the peripheral variation of rate of heat flow from surface of single, vertical, round pipe placed transversely in stream of fluid. That heat-flow distribution curve has maxima at front and back of cylinder and minima at sides, as predicted by Lohrisch from isothermal absorption data, is confirmed by an experimental method which is self-reproducible within 4 per cent.

L'Ingegnere. Vol. V. No. 6. June 1931.

L'ingegneria agraria alla Fiera di Milano 1931. p. 424-7. (The Agricultural Engineer at the Milan Show, 1931).

Journal of Agricultural Research. Vol. 43. No. 1. July 1, 1931.

Instrument for Determining the Breaking Strength of Straw and a Preliminary Report on the Relation between Breaking Strength and Lodging. By S. C. Salmon. p. 73-82.

Der Kulturtechniker. Vol. XXIV. No. 34. August, 1931.

Ueber die Strangentfernung bei Dranungen. Kritische Bemerkungen. By von Prof. Dr. Josef Kozeny. p. 226-32. (Concerning spacing of lines of drain tile. Theoretical and mathematical discussion).

Manufacturers Record. Vol. C. No. 3. July 16, 1931.

Growing Cotton for Cellulose. By Peter A. Carmichael. p.21.

Texas' Largest Irrigation Project. By A.S. Fry. p. 24-6.
Project will bring water to 130,000 acres of fertile agricultural lands. District lies about 20 miles north of Rio Grande river, with Raymondville as principal town. Main Valley Line of Missouri Pacific Railroad extends through center of district affording an outlet to northern and eastern markets. Storage reservoir in center of 13,000-acre tract. 560 miles of canals and pipe lines to distribute water. Several sections of project already completed. Land suited to truck growing and citrus fruit cultivation.

Milk Plant Monthly. Vol. XX. No. 8. August, 1931.

Floors for Dairy Plants: Wear and acid resistance are chief considerations, concrete and tile the principal materials. By A. W. Farrall. p. 40-5.
Floor materials. General considerations on installation. Concrete floors. Tile floors. Terrazzo floors.

Montana Farmer. Vol. 18. No. 22. July 15, 1931.

Developing Machinery for Beet Production. By E. M. Mervine. p. 7, 17.

Handling Flax with the Combine Harvester: Farmers tell about success they have had with this method. p. 7.

Pumping Water Successfully for Irrigation: Types and sizes of pipes for efficient operation. p. 13.
Friction loss. Contrast in efficiency. Suction pipe.

National Farm Journal. Vol. LV. No. 8. August, 1931.

Low-Cost Barns. By J. L. Strahan. p. 18, 20.

New Jersey Agriculture. Vol. XIII. No. 9. September, 1931.

Electrical Aids for Poultrymen. By W. C. Krueger. p. 6-7.
Lighting for more eggs. Pumping and warming water. Electric brooding. Electric burglar and fire alarms.

New Reclamation Era. Vol. 22. No. 8. August, 1931.

Hoover Dam and Its Influence on the Southwest. By Dr. Elwood Mead. p. 162-5.
Destiny of Southwest will be shaped by building Hoover Dam. If it is built, cities of that region will continue to grow. If it is not built, they must stagnate. They need and must have water which will be stored in great lake it will create. If it is built, people of Imperial Valley will be secure. If it is not built, their homes and towns will almost certainly be submerged.

Deadwood Dam, Boise Project, Idaho. By R.J. Newell. p. 175-9.
Site. Construction work. Roads. Design of Dam. Construction of Dam.

Pencil Points. Vol. XII. No. 8. August, 1931.

Geometry of Architectural Drafting. By Ernest Irving Freese. p. 587-97.

Pencil Points. Vol. XII. No. 9. September, 1931.

Circulation in the House Plan. By Arthur Bates Lincoln. p.673-6.

Popular Mechanics. Vol. 56. No. 3. September, 1931.

Ten Thousand Holes an Acre Prevent Soil Erosion. p. 356.
Alternating shovels work up and down with forward motion of plow, scooping out dirt and piling it at regular intervals. Machine leaves 10,000 such holes per acre, each having capacity of about three gallons of water.

POWER. Vol. 74. No. 4. July 28, 1931.

Corrosion Prevention by Metal Composition. By W.S. Johnston. p. 121-3.

_____ Vol. 74. No. 5. August 4, 1931.

Corrosion Prevention by Protective Coatings. By W. S. Johnston. p. 155-7.
Corrosion can be retarded, if not prevented, by applying protective film to exposed surfaces.

Research in Power and Allied Fields. p. 166-7.

_____ Vol. 74. No. 6. August 11, 1931.

Chart Simplifies Water-Flow Problems. By Robert Ball. p.202-3.
By use of storage-reservoir-capacity curve and second-foot scale, problems on available water for power generation are easily worked out.

Power Plant Engineering. Vol. XXXV. No. 16. August 15, 1931.

International Congress for Testing Materials. p. 839.

Cornstalk Insulating Board: Manufacture for heat insulation.
From bulletin of Bureau of Standards, U.S. Dept. of Commerce, by O.R. Sweeney and W.E. Emley. p. 860-1.

Public Roads. Vol. 12. No. 5. July, 1931.

Subgrade Soil Constants, Their Significance, and Their Application in Practice. By C. A. Hogentogler, A. M. Wintermyer and E. A. Willis. p. 117-44.
Part II: A discussion of the soil constants and the soil identification chart. Part III: Utilization of the subgrade soil identification chart.

Refrigeration. Vol. 50. No. 1. July, 1931.

When Should Ice Be Used in Air Cooling and Conditioning? By W. R. Sanders. p. 24-5.

Central Station Refrigeration. By Siegfried Ruppricht. p. 26, 28.

Sixth International Congress of Refrigeration. p. 36, 38.

_____ Vol. 50. No. 2. August, 1931.

New Application of Silica Gel in Refrigeration. p. 30, 32.
Cab is fitted with small steam boiler that supplies necessary heat for expelling sulphur dioxide from Silica Gel in absorber. Steam for this purpose is admitted automatically to absorber when Silica Gel in same has become saturated with sulphur dioxide from evaporating coils.

Rural Electrification and Electro-Farming. Vol. VII. No. 74. July, 1931.

Exhibits to Look for at the Royal Show, July 7 to 11. p. 39-46.

Water Pumping. p. 55-6.
Two methods of raising water viz., surface and deep well pumps. Limit from which suction pipe may draw water is just over 31 feet. Surface pumps are not to be recommended where water has to be drawn more than 25 feet. There are a large number of types of shallow well pumps, these consist of bucket pumps, rotary pumps, centrifugal pumps, ram and plunger displacement pumps, diaphragm pumps, etc. Deep well pumps are usually more expensive than shallow well pumps. There are two kinds of deep well pumps: (1) air power type and (2) most generally used kind, known as plunger pump type.

Science. Vol. 73. No. 1901. June 5, 1931.

Scientific Apparatus and Laboratory Methods: Simple device for humidity regulation p. 617-18.
Accurate means of humidifying air in incubators. Device is accurate to within $\pm$ 2 per cent relative humidity and may be built complete for approximately $20.

Science and Invention. Vol. XIX. No. 3. July, 1931.

House of Tomorrow. By Mary Jacobs. p. 214, 256.

Science and Invention. Vol. XIX. No. 4. August, 1931.

Idea That Grew Into an Industry. By Alfred M. Caddell. p. 288-9, 332-3.

Washing Down Hills to Make New Land. By Edwin F. Lindenberger. p. 293.

Southern Power Journal. Vol. 49. No. 9. September, 1931.

Southwest Power Conference, Power Show and Mechanical Exposition. p. 37-42. Gives program.

Successful Farming. Vol. XXIX. No. 8. August, 1931.

To Keep Soil at Home. By E. W. Lehmann. p. 7, 38-9. Mangum terrace is type of drain, built so it will check flow of water, allow more of it to soak in, and hold silt. It is broad base ridge built across slope, with shallow ditch on upper side with slight fall of not more than 6 inches to 100 feet. Series of these broad ridges are constructed at regular intervals from top to foot of slope. Principal advantage of Mangum terrace is that it does not greatly interfere with use of modern machines. At same time it checks flow of water and provides adequate channel through which it may discharge. Such terraces may be farmed over without wasting any land.

Will You Use These Better Ways to Fill the Silo? By F. W. Duffee. p. 9, 48-9.

_____ Vol. XXIX. No. 9. September, 1931.

Winter Egg Profits Require Good Housing. By F. C. Fenton. p. 9, 50.

On Their Dairy Farms. By B. W. Faber. p. 37-8. Electricity does as much work as man at $165 year less cost.

Utah Farmer. Vol. 25. No. 2. August 15, 1931.

Conservation, Rehabilitation, Watershed Production on Public Domain. By William Peterson. p. 3, 12, 16.

Washington Farmer. Vol. LXV. No. 7. August 13, 1931.

Water Comes to the Kittitas. By Edward L. Dennis. p. 3, 18.

Wisconsin Agriculturist and Farmer. Vol. LVIII. No. 26. June 27, 1931.

Cost Items in Dairy Refrigeration: Wisconsin farm figures encourage mechanical cooling of milk. p. 3, 10.

The Library has just received the following publications:

Agricultural Research in New Hampshire. Annual Report of the Director of the New Hampshire Agricultural Experiment Station for year 1930. Bul. 256. 1931. 27 p.

A. S. A. E. Standard Disk Blades for Disk Plows, Harrows, Drills, Listers and Cultivators. 1931. 3 p.

A. S. A. E. Standard Power Take-Off for Agricultural Tractors and Machines. 1931. 3 p.

Annual Progress Report to the Texas Committee on the Relation of Electricity to Agriculture. 1930. By P.T. Montfort, Department of Agricultural Engineering, Agricultural & Mechanical College of Texas, College Station, Texas. 1931. 146 p.

Bracing Farm Buildings. By George W. Trayer and M.C. Betts. U. S. D. A. Leaflet No. 77. 1931. 6 p.

Brooding Chicks in Large Units. By J. H. Claybaugh. Nebraska Agricultural College Extension Service. Extension Circular 1462. 1931. 6 p.

Canadian Electrical Code PartI. 2d edition. Canadian Engineering Standards Association. 1930. 210 p.

Care and Repair of the Home. By Vincent B. Phelan. N. Y., Doubleday, Doran & Co., Inc. C. 1931. 306 p.

Centennial of the reaper invented by Cyrus Hall McCormich in 1831. International Harvester Company of America (Incorporated). 1931. 24 p.

Civil Engineers Encyclopedic Dictionary. By Robert E. Benson. Glossary of words, terms, abbreviations, symbols, and lettering, pertaining to civil engineering and surveying. Los Angeles, Benson Book Company, Inc. 1930. 127 p.

Clay Tiles for Floors and Walls. U. S. Bureau of Standards Simplified Practice Recommendation R61-30. 1931. 24 p.

Colony Brooder House for the Farm Flock. By J.R. Redditt and Paul R. Hoff. Extension Circular 730. Nebraska Agricultural College Extension Service. 1931. 13 p.

The Library has just received the following publications:

Control of Floods on the Passaic river. New Jersey, Water Policy Commission. Special report, No. 2. 1931. 2 Vol. Vol. 1. General summary. Vol. 2. Technical details.

Cost of Wheat Production by Power Methods of Farming, 1919-1929. By J. G. Klemgard and G.F. Cadisch. Washington Agricultural Experiment Station, Pullman, Washington. Bul. 255. 1931. 24 p.

Development of the Federal Program of Flood Control on the Mississippi River. By Arthur DeWitt Frank. N.Y., Columbia University Press. 1930. 269 p.

Directions for Building Illinois Shed-Roof Poultry House. By E. G. Johnson and H.H. Alp. Illinois Agr. Expt. Sta. Circular 368. 1931. 4 p.

Economic Theory of Rural Line Design. By Edwin Kurtz. Oklahoma Agricultural and Mechanical College. Engineering Expt. Sta. Publication No. 4. 1930. 10 p.

Effect of Turbulence on the Registration of Current Meters. By David L. Yarnell and Floyd A. Nagler. A. S. C. E. Paper No. 1778. 1931. p. 765-860.

Electric Hotbeds. By Ralph R. Parks. Missouri College of Agriculture. Agr. Expt. Sta. Bul. 304. 1931. 16 p.

Electric Motors for the Farm. By Frank J. Zink. Kansas College of Agriculture. Extension Service. Extension Bul. No. 69. 1931. 23 p.

Estimating Building Costs. By Charles F. Dingman. 2d odition. N.Y., McGraw - Hill Book Company, Inc., 1931. 277 p.

Filters for the Reproduction of Sunlight and Daylight and the Determination of Color Temperature. By Raymond Davis and K. S. Gibson. Miscellaneous Publication, Bureau of Standards, No. 114. 1931. 165 p.

Forced Draft Stump Burner. By R. N. Miller. Washington State College. Extension Service Bulletin No. 163. 1931. 15 p.

Gully Control. By M. R. Bentley. Texas Agricultural and Mechanical College. Extension Service Circular No. 49. 1931. 12 p.

The Library has just received the following publications:

Handbook of Oil Burning. By Harry F. Tapp. N.Y., American Oil Burner Association, C. 1931. 629 p.

Hotbeds and Cold Frames. By D. C. Mooring. Oklahoma Agr. and Mech. College. Circular No. 211. 1931. 8 p.

Housing Problems in America. Proceedings of Tenth National Conference on Housing. Philadelphia. January 28, 29, 30. 1929. New York. 1929. 355 p.

Institution of Civil Engineers Proceedings. 1928-29; 1929-30.

Irrigation District Laws of Oregon. 1931 Supplement to 1929 Compilation. 1931. 17 p.

Laying House and Equipment. By P. H. Gooding. South Carolina Clemson Agricultural College Circular No. 115. 1931.16 p.

Marketing and Manufacturing Factors in Oregon's Flax Industry. By A. L. Lomax and Theodore Van Guilder. Univ. of Oregon Studies in Business No. 8. 1930. 43 p.

Mechanical Tests on Tractor Farming Equipment: Progress Report. By H. E. Murdock. Montana Agr. Expt. Sta. Bul. No. 243. 1931. 52 p.

Modernizing the Home. (Suggestions for Remodeling and Modernization of Houses and Apartments.) Prepared for President's Emergency Committee for Employment. U. S. Dept. of Commerce. 1931. 5 p.

Outlook for Land Utilization in the United States. By O.E. Baker. U. S. Department of Agriculture. Extension Service Circular No. 168. 1931. 33 p. mimeographed.

Permissible Economic Rate of Irrigation Development in California. A cooperative Report by the College of Agriculture, Univ. of California. 1930. California Dept. of Public Works. Division of Water Resources. Bul. No. 35. 1931. 205 p.

Pipe Line Currents and Soil Resistivity as Indicators of Local Corrosive Soil Areas. By E. R. Shepard. U. S. Bureau of Standards Research Paper No. 298. 1931. 683-708 p. (Reprint from Bureau of Standards Journal of Research Vol. 6, April, 1931.)

Place and Function of Land Reclamation in The Agricultural Program. By James A. King. (Discusses land clearing, land drainage, soil erosion, irrigation). 1931. 22 p. (Prepared for presentation at Annual Convention American Society Agricultural Engineers at Ames, Iowa, June 22-26. 1931.)

The Library has just received the following publications:

Plan for the Milk House. By W. A. Foster, H. A. Ruehe, and C. S. Rhode. Illinois College of Agriculture and Agricultural Experiment Station Circular 371. 1931. 4 p.

Planning and Planting the Indiana Farmstead. By R. B. Hull. Purdue University. Dept. of Agr. Extension. Extension Bul. No. 178. 1931. 35 p.

Preliminary Report on Controlling Pink Bollworm in Texas by Winter Cultural Methods. By D. A. Isler, and F. A. Fenton. (Reprinted from Journal of Economic Entomology Vol. 24, No. 4, August, 1931.) 1931. 796-806 p.

Preliminary Report on Effect of Irrigation on Major Berry Crops in the Willamette Valley. By C. E. Schuster, R.S. Besse, G.L. Rygg, and W.L. Powers. Oregon Agr. Expt. Sta. Bul. No. 277. 1931. 51 p.

Rainfall Penetration and Consumptive Use of Water in Santa Ana River Valley and Coastal Plain. (A Cooperative Progress Report by the Division of Agricultural Engineering of the U. S. Department of Agriculture) 1930. California Dept. of Public Works, Division of Water Resources, Bul. No. 33. 1931. 162 p.

Range Shelters. By T. B. Charles and H. O. Stuart. University of New Hampshire Extension Service. Extension Circular 126. 1931. 3 p.

Recommended Minimum Requirements for Fire Resistance in Building. Report of the Department of Commerce Building Code Committee. Building and Housing No. 14. 1931. 58 p.

Remodelling Farm House Cellars for the Storage of Potatoes. By O. Butler. New Hampshire Agricultural Experiment Station Circular No. 36. 1931. 4 p.

Report of the Work of the Commission on Coast Erosion and Marsh Development. New Hampshire. Commission on Coast Erosion and Marsh Development. 1931. 16 p.

Report of the Rural Electric Extension Committee of The College Division A.S.A.E. Including the Outline of A. Rural Electrification Extension Project. 1931. 11 p. mimeographed. U. S. D. A. Bureau of Public Roads. Division of Agricultural Engineering.

The Library has just received the following publications:

Rural Electrification Development in Idaho. By Hobart Beresford. Idaho Agr. Expt. Sta. Bul. No. 180. 1931. 84 p.

Septic Tank for Farm Sewage Disposal. By Ralph L. Patty. South Dakota College of Agriculture and Mechanic Arts. Extension Circular No. 307. 1931. 15 p.

Sewage Disposal for North Dakota Farm Homes. By C.L. Hamilton. North Dakota Agricultural College. Agricultural Extension Division Circular No. 103. 1931. 28 p.

Snow-Melting Characteristics. By George D. Clyde. Utah Agr. Expt. Sta. Bul. No. 231. 1931. 47 p.

Soil Fertility Investigations Sugar Cane District of Louisiana. By A. M. O'Neal, and Sim J. Breaux, Jr. Louisiana Agr. Expt. Sta. 1931. 45 p.

South Dakota Poultry House. By Ralph L. Patty. South Dakota College of Agriculture. Extension Circular No. 295. 1930. 16 p.

Study of St. Lawrence Waterway Project. By Samuel S. Wyer. 1931. 31 p.

Suggestions for the Improvement of Old Bank Dairy Barns. By M. C. Betts, and M. A. R. Kelley, U.S. Department of Agriculture Circular No. 166. 1931. 34 p.

Terracing in Oklahoma. By G. E. Martin. Oklahoma Agricultural and Mechanical College Circular No. 218. 1931. 31 p.

Transporting and Handling Milk in Tanks. By Ralph P. Hotis. U. S. Department of Agriculture Technical Bul. No. 243. 1931. 24 p.

Treatise on Leather Belting. By George B. Haven and George W. Swett. 1st edition. Cambridge, Mass., Technical Composition Company. 1931. 249 p.

Trench Silo in Nebraska. By Ivan D. Wood and E. B. Lewis. Nebraska Agricultural College. Extension Service Circular No. 713. 1931. 16 p.

The Library has just received the following publications:

Trench Silos. By C. J. Hutchinson. Louisiana Agricultural and Mechanical College Extension Circular No. 148. 1931. 12 p.

Voltage Relations and Losses in Small Universal Motors. By A. F. Puchstein and Ivor S. Campbell. Ohio State University Eng. Expt. Sta. Bul. No. 58. 1931. 28 p.

Waterworks for Texas Farm Homes. Agricultural and Mechanical College of Texas. Extension Service Bul. No. 67. 1930. 19 p.

Wind Pressure on a Model of a Mill Building. By Hugh L. Dryden and George C. Hill. U. S. Bureau of Standards Research Paper No. 301. 1931. 735-755 p. (Reprint from Bureau of Standards Journal of Research Vol. 6, April, 1931).